



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/978,596	10/18/2001	Taiichi Mori	L7016.01136	5220

7590 12/23/2002  
STEVENS, DAVIS, MILLER & MOSHER, L.L.P.  
Suite 850  
1615 L Street, N.W.  
Washington, DC 20036

EXAMINER

HARRINGTON, ALICIA M

ART UNIT PAPER NUMBER

2873

DATE MAILED: 12/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/978,596

Applicant(s)

MORI ET AL.

Examiner

Alicia M Harrington

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2873

## DETAILED ACTION

### *Information Disclosure Statement*

The Examiner has considered the information disclosure statement filed on 10/18/01.

### *Specification*

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it contains more than 150 words.

Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: At page 10, line 3, the element 24 is not exhibited in the drawing. At page 7, lines 23-28, the element 27 is not exhibited in the drawings.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

Art Unit: 2873

Independent claims 1,3,7 and 11, all recite "the wave front shape correcting said coma aberration in correspondence to an increase of radius of the said collimator lens". The examiner is unclear as to applicants intended meaning of an increase of radius in correspondence to a wave front shape. Thus, the language renders the claims indefinite.

Claims 2, 4-6, 8-10, 12-16 inherits the indefinites of the independent claims from which they depend.

The Examiner will examine the claims as best understood by the Examiner.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al (US 6,418,108).

Regarding claims 1 and 13, Ueda discloses in figure 1 an optical head for reproducing a recording information of an optical disc comprising an optical system having a light source (10), and detector (19) for receiving reflected light, a collimator (13) where the collimator forms a fine divergent beam and wave shape for correcting coma aberration (see col. 5, lines 35-66; col. 6, lines 5-30 and col. 26, lines 30-44).

However, Ueda fails to specifically disclose the optical system comprises a unit with the light

and detector. However, the Examiner has issued an official notice that a unit with the light and detector

Art Unit: 2873

are well known in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made and optical detector unit as claimed, since it is well known optical head configuration and would be within routine skill in the art.

Claims 3,7,11, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 6,337,841) in view Arai et al (US 6,411,587).

Regarding claims 3 and 14, Kim et al discloses an optical pickup system comprising (see figure 11) an first optical unit (210; CD), second optical unit (220); a light separating means (231); an objective lens (237); a first collimator (214); a second collimator (225), where the second collimator forms a wave front shape forming a fine divergent light and wave front shape correcting an aberration is produced by a grating lens forward the objective lens. The CD uses a light source have first wavelength and the DVD uses a light source having a second wavelength (see col. 1, lines 40-54). However, Kim fails to specifically disclose the system corrects for coma aberration (disk tilt or optical axis tilt due to the objective lens). However, it is well known in the art, as taught by Arai.

In same field of endeavor, Arai discloses an optical pick up system for spherical and coma aberration correction where the collimator lens (13 or 130) is configured to correct for coma aberration (col. 41, lines 48-67). The collimator with grating is positioned to convert the radiated light into fine divergent pencil rays and correction of coma. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made modify, Kim as taught by Arai, to provide an optical pickup which corrects for a variety of aberrations.

Art Unit: 2873

Regarding claims 7 and 15, Kim et al discloses an optical pickup system comprising (see figure 11) an first optical unit (210), second optical unit (220); a light separating means (231); an objective lens (237); a first collimator (214); a second collimator (225), where the elements are arranged so that the second light source reaches the objective lens through the second collimator lens and light separating means and where the second collimator forms a wave front shape forming a fine divergent light and wave front shape correcting an aberration is produced by a grating lens forward the objective lens. The CD uses a light source have first wavelength and the DVD uses a light source having a second wavelength (see col. 1, lines 40-54). However, Kim fails to specifically disclose the system corrects for coma aberration (disk tilt or optical axis tilt due to the objective lens). However, it is well known in the art, as taught by Arai.

In same field of endeavor, Arai discloses an optical picks up system for spherical and coma aberration correction where the collimator lens (13 or 130) is configured to correct for coma aberration (col. 41, lines 48-67). The collimator with grating is positioned to convert the radiated light into fine divergent pencil rays and correction of coma. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made modify, Kim as taught by Arai, to provide an optical pickup which corrects for a variety of aberrations.

Regarding claims 11 and 16, Kim et al discloses an optical pickup system comprising (see figure 11) an first optical unit (210), second optical unit (220); a light separating means (231); an objective lens (237); a first collimator (214); a second collimator (225), where the elements are arranged so that the second light source reaches the objective lens through the second collimator lens and light separating means and where the second collimator forms a wave front shape forming a fine divergent light and wave front shape correcting an aberration is produced by a

Art Unit: 2873

grating lens forward the objective lens. The CD uses a light source have first wavelength and the DVD uses a light source having a second wavelength (see col. 1, lines 40-54). However, Kim fails to specifically disclose the system corrects for coma aberration (disk tilt or optical axis tilt due to the objective lens). However, it is well known in the art, as taught by Arai.

In same field of endeavor, Arai discloses an optical pick up system for spherical and coma aberration correction where the collimator lens (13 or 130) is configured to correct for coma aberration (col. 41, lines 48-67). The collimator with grating is positioned to convert the radiated light into fine divergent pencil rays and correction of coma. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made modify, Kim as taught by Arai, to provide an optical pickup which corrects for a variety of aberrations.

Further, Kim et al in the embodiment of figure 11, the optical units disclose two detectors. In the embodiment of figure 3, Kim designs the system without the optical light/detector units. However, Kim discloses the claimed element arrangement where the second light source(121) forms an optical path reaching the said objective lens and light separating means and first collimator (133). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange an optical system as claimed, since Kim clearly suggest it an viable arrangement when using multiple wavelength light sources and several collimation lens.

### ***Conclusion***

### ***Allowable Subject Matter***

Art Unit: 2873

Claims 2, 4-6, 8-10, 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, 4, 8, 12 prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the dependent claims, in such manner that a rejection under 35 U.S.C 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims, which includes where a ratio of the sine amount increases substantially in proportion to the square of the radius of a collimator lens as claimed.

Regarding claim 5-6, 9-10, prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the dependent claims, in such manner that a rejection under 35 U.S.C 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims, which include the ratio of the radius of curvature of the incident and radiating surface fall within the claimed range.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takahashi (US 6,108,139) discloses an optical head device and method of information reproduction using the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M Harrington whose telephone number is 703 308 9295.

The examiner can normally be reached on Monday - Thursday 9:30-6:00





Art Unit: 2873

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 703 308 4883. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7724 for regular communications and 703 308 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

Alicia M Harrington  
Examiner  
Art Unit 2873

  
AMH  
December 16, 2002

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800